Patent claims:

1. An optical filter for producing a drop-and-continue function, which has a wavelength-selective grating with temperature-dependent reflection and transmission characteristics, and which has a device (HE) for adjusting the temperature of the grating so that a specific signal component that is to be branched off is reflected by the grating and another signal component having the same wavelength is transmitted.

2. The optical filter as claimed in claim 1, characterized in that it loses its filter action as a result of a further temperature change.

3. The optical filter as claimed in claim 1 or 2, characterized in that at least two regions (B1, B2) in an optically transparent material, which have different temperature-dependent refractive indices n_1 (t) and n_2 (t), are essentially involved in the optical waveguiding and/or the filter action, and

in that the difference between the refractive indices n_1 (t) and n_2 (t) is at least approximately zero at one temperature within the temperature-controllable working range.

4. The optical filter as claimed in claim 3, characterized in that it is designed in planar technology.

5. The optical filter as claimed in one of the preceding claims, characterized in that it is designed as a tunable band-stop filter.

6. The optical filter as claimed in claim 5, characterized in that

its bandwidth is tuned to that of a transmission channel.

7. The optical filter as claimed in claim 5, characterized in that the bandwidth is tuned to the bandwidth of a plurality of adjacent transmission channels.

8. The optical filter as claimed in claim 5, 6 or 7, characterized in that the tuning is carried out by mechanical pressure, tension or bending.

9. An add-drop-continue module having an optical filter (BSF) as claimed in one of claims 1 to 8, characterized in that the tunable optical filter (BSF) is arranged between a branching device (ZI1) for optical signals and an insertion device (ZI2, K0).

10. The add-drop-continue module as claimed in claim 9, characterized in that a plurality of optical filters (BSF1 to BSFM) are arranged between a branching device (ZI1) for optical signals and an insertion device (ZI2, K0).

11. The add-drop-continue module as claimed in claim 9 or 10, characterized in that circulators are provided as the branching device (ZI1) and/or as the insertion device (ZI2).

12. An add-drop-continue device, characterized in that a plurality of add-drop-continue modules as claimed in claim 9, 10 or 11 are connected in series.

13. A drop-and-continue module having an optical filter (BSF) as claimed in claim 5, 6, 7 or 8, characterized in that the optical filter (BSF) is connected downstream of a branching device (ZI1) for optical signals.

14. A cross-connect module having a plurality of inputs and a plurality of outputs, characterized in that it comprises at least one optical filter as claimed in one of claims 1 to 8.

15. A cross-connect module having a plurality of inputs and a plurality of outputs, characterized in that it comprises at least one add-drop-continue module as claimed in one of claims 9 to 12.

16. The cross-connect module as claimed in claim 14 or 15, characterized in that the cross-connect module comprises at least one quad circulator as the branching device or as the insertion device.

17. A cross-connect device, characterized in that it comprises a plurality of series-connected cross-connect modules as claimed in one of claims 11 to 17.

18. A method for tuning the filter designed as claimed in one of claims 1 to 8 without interfering with transmitted signals, characterized in that the filter is adjusted in such a way, as a result of a first temperature change, that it loses its filter characteristic,
in that tuning of the filter to a predetermined new wavelength is then carried out, and

in that the filter is subsequently adjusted, as a result of a futher temperature change, in such a way that it regains its filter characteristic at the newly adjusted wavelength.

19. Use of an optical filter as claimed in one of claims 1 to 8, for the production of

a circuit having add-and-drop functionality and/or
a circuit having drop-and-continue functionality and/or
a circuit having multicast functionality and/or
a circuit having dual-homing functionality and/or
a circuit having cross-connect functionality.